DOCKET NO: 251290US0

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
SHINJI MORIYAMA, ET AL.	: EXAMINER: DOTE, J. L.
SERIAL NO: 10/815,650	:
FILED: APRIL 2, 2004	: GROUP ART UNIT: 1756
FOR: TONER FOR ELECTROSTATIC IMAGE DEVELOPMENT	:

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

This is an appeal of the Final Rejection dated March 29, 2006 of Claims 1-10. A Notice of Appeal, and Amendment under 37 CFR 1.116, are **submitted herewith**.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Kao Corporation, having an address 14-10, 1-chome, Kayaba-cho, Nihonbashi, Chuo-ku, Tokyo, Japan.

II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative and the assignee are aware of no appeals, interferences, or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1-10, all the claims in the application, stand rejected and are herein appealed.

IV. STATUS OF THE AMENDMENTS

An Amendment under 37 CFR 1.116 is **submitted herewith**, as referred to above, which amends the specification only.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent Claim 1 is drawn to a toner for electrostatic image development, comprising:

a resin binder; and

a colorant comprising a charcoal powder, wherein the charcoal powder has a volume-based median particle size (D_{50}) of 5.6 μm or less, and a coefficient of variation of 80% or less.

See the specification at page 2, lines 4-9.

VI. GROUNDS OF REJECTION

Ground (A)

Claims 1-3, 5, 9 and 10 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over, JP 61-203463 (Machida), as evidenced by *Grant & Hackh's Chemical Dictionary*, page 14 (Dictionary), Schaffert, *Electrophotography*, page 604, Fig. 248, and "applicants' admission at page 3, lines 10-16, page 11, line 23, to page 12, line 1, and in Table 1 at page 22, of the instant specification (applicants' admission I)".

Ground (B)

Claim 4 stands rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Machida, as evidenced by Dictionary and "applicants' admission I".

Ground (C)

Claim 6 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Machida, as evidenced by Dictionary and "applicants' admission I", combined with U.S. 6,383,705 (Aoki et al).

Ground (D)

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Machida, as evidenced by Dictionary and "applicants' admission I", combined with U.S. 5,079,123 (Nanya et al).

VII. ARGUMENT

Grounds (A)-(D)

The claims all stand rejected on the grounds stated above under Grounds of Rejection. Those rejections are untenable and should not be sustained.

Claim 1 is drawn to a toner for electrostatic image development, comprising a resin binder; and a colorant comprising a charcoal powder, wherein the charcoal powder has a volume-based median particle size (D_{50}) of 5.6 μm or less, and a coefficient of variation (CV) of 80% or less.

Machida discloses a toner containing a binder resin, colorant, and activated carbon as a black pigment. Machida exemplifies an activated carbon, identified in the English translation as "sold as Shirawashi A-1 by Takeda Pharmaceutical Industries K.K." (page 8). Machida discloses that the particle size of his activated carbon should be approximately 5 μm or less (page 4, lines 5-7). According to Table 3 therein, the particle diameter of an exemplified activated carbon is 4.5 μm (Toner (1)). Since Machida discloses that using Shirawashi A-1 as a toner results in, *inter alia*, good fine line reproducibility, the Examiner finds that Shirawashi A-1 must meet the volume-based median particle size (D_{50}) and coefficient of variation (CV) limitations of the present claims, since the comparative data of record herein shows that using activating carbon that does not meet both the D_{50} and CV limitations of the claims results in poor fine line reproducibility.

Applicants have previously replied that the actual product disclosed in Machida is Shirasagi A-1, as confirmed by the Declaration under 37 CFR 1.132 of named coinventor Shinji Moriyama (Moriyama Declaration), filed October 27, 2005, and not Shirawashi A-1,

as described in the English translation of Machida, or Shiragashi A-1, as assumed by the Examiner. In addition, according to the Moriyama Declaration, it appears that the material exemplified as the activated carbon in Machida was pulverized before use. It is impossible to determine what the CV was for the material used in Machida. In effect, Machida is insufficiently disclosed with regard to CV, and one skilled in the art practicing Machida would be without a clue regarding any significance of CV.

It is well settled that prior art under 35 U.S.C. § 102(b) must sufficiently describe the claimed invention to have placed the public in possession of it. *In re Donohue*, 766 F.2d 531, 226 USPQ 619 (Fed. Cir. 1985). A reference must be sufficiently enabling to place the invention in possession of the public. *In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994). Machida does not enable the presently-claimed invention.

In the Final Rejection, the Examiner finds that Applicants' assertion of the inability to determine the CV value of the charcoal powder used in Machida is not persuasive; that if a patent were issued herein, any competitor using a similar toner comprising a charcoal powder would have to determine whether it has a CV of 80% or less in order to avoid infringement; that it is Applicants' burden to distinguish their claimed toner from prior art toners that are sufficiently similar that a reasonable presumption arises that they are the same; and that Applicants are in the best position to come forward with objective evidence to rebut this presumption.

In reply, any competitor needs to address the question of potential patent infringement, regardless of the subject matter. The present situation is no different from this question generally. Moreover, while Applicants do not disagree with Applicants' burden generally, the Moriyama Declaration shows that it is both impossible to meet the burden and

that Machida is insufficiently disclosed with regard to CV, as discussed above. There is no way to determine what the CV is of Machida's pulverized commercial product, since Machida contains no details of the pulverization.

The Moriyama Declaration demonstrates that a CV above 80% results in poor background fogging and thin-line reproducibility.

In the Final Rejection, the Examiner finds that the Moriyama Declaration "does not appear to be a probative comparison" to Machida. The Examiner is thus relying on the comparative toner described at paragraphs 8 and 9 of the Moriyama Declaration. Particularly, in view of the disclosure in Machida that the particle size of his activated carbon should be approximately 5 μm or less, the Examiner finds that the particle size of 5.59 μm in the Moriyama Declaration is thus not probative. The Examiner also bases her finding on the data in Table 3 of Machida which shows that using activated carbon particles of diameter 7.5 μm and 10.0 μm result in slight occurrence of fogging and filming after production of various copies, which results are worse than those obtained using a particle diameter of 4.5 μm or 1.0 μm.

In reply, as discussed above, Machida describes that the particle diameter be **approximately** 5 μm or less. The data show that a 7.5 μm diameter is not as good. This data says nothing about a particle diameter of 5.59 μm, as used in the Moriyama Declaration, which diameter, it is respectfully submitted, is approximately 5 μm. Moreover, **no** comparison can be probative of Machida since, as discussed above, Machida discloses nothing about CV, and it is impossible to determine what the CV was of Machida's activated carbon.

Regarding "applicants' admission I", it is not proper for the Examiner to equate qualitative expressions of results, such as "good" and "poor" thin-line reproducibility between the specification herein, and the prior art, to find that means to obtain the results are quantitatively the same, such as a CV of 80% or less. There is no indication that the respective standards of measurement for the present invention and Machida are the same. Nor is it proper for the Examiner to use Applicants' own comparative data, which is not prior art, against them.

In response to the above arguments, the Examiner finds that she "is merely using the available evidence of record to determine whether or not it is reasonable to transfer the burden to Applicants to distinguish over prior art toners."

In reply, Applicants do not dispute that the Examiner may rely on pertinent prior art as evidence of record. But it is not proper to rely on evidence of record that is not prior art or an admission of prior art. In addition, the Examiner has no answer to the argument that qualitative expressions of results cannot be relied on when there is no indication of any similarity in the respective standards of measurement.

The remaining prior art does not render the above-discussed deficiencies of Machida, since it discloses and suggests nothing with regard to CV of a charcoal powder colorant.

The Examiner finds that a *prima facie* case has been established that Machida's toner (1) meets the CV limitation of present Claim 1.

In reply, **no** such *prima facie* case has been made out, because it is impossible to determine what the CV was for Machida's toner (1).

The present case is **not** a case of inherent anticipation, wherein an inventor discovered an inherent property of the prior art, even if it were assumed that Machida's toner (1)

inherently met the presently-recited CV limitation. The reason is that it is impossible to verify that Machida's toner (1) does, in fact, meet the CV limitation, since Machida has not disclosed how his toner (1) was prepared. In case precedent that denied a patent based on inherent anticipation, it could always be verified that the inherent property was indeed present since there was no question of being able to reproduce the anticipated subject matter. "[T]he fact that a characteristic is a necessary feature or result of a prior-art embodiment (**that is itself sufficiently described and enabled**) is enough for inherent anticipation, even if that fact was unknown at the time of the prior invention" (emphasis added). *Toro Co. v. Deere &Co.*, 355 F.3d 1313, 1320, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004). Thus, a prerequisite for inherent anticipation is that the claimed invention be enabled by the prior art.

As supported by the Moriyama Declaration, it must be presumed that Machida began with much larger diameter material and then pulverized it to obtain his particle diameter. Since CV is not a function of particle diameter, but is independent therefrom, it may not be presumed that such pulverization necessarily produces a particular CV.

Applicants point can be summed up as follows. Assume one skilled in the art attempted to duplicate Machida's toner (1) and obtained results other than that disclosed in Machida. One skilled in the art would be without a clue why the results were different. There is no evidence in the record by which one would conclude that the reason for these differences was that the CV limitation of the present claims was not satisfied.

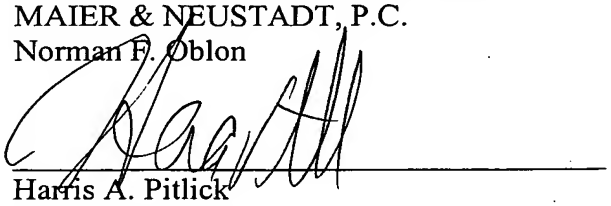
For all the above reasons, it is respectfully requested that the rejections be REVERSED.

VIII. CONCLUSION

For the above reasons, it is respectfully requested that all the rejections still pending in the Final Office Action be REVERSED.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



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NFO:HAP\la

CLAIMS APPENDIX

Claim 1: A toner for electrostatic image development, comprising:

a resin binder; and

a colorant comprising a charcoal powder, wherein the charcoal powder has a volume-based median particle size (D_{50}) of 5.6 μm or less, and a coefficient of variation of 80% or less.

Claim 2: The toner according to claim 1, wherein the resin binder comprises a polyester.

Claim 3: The toner according to claim 1, wherein the charcoal powder is contained in an amount of from 1 to 40 parts by weight based on 100 parts by weight of the resin binder.

Claim 4: The toner according to claim 1, wherein the charcoal powder is at least one member selected from the group consisting of wood coal-based charcoal powders, coconut-shell-based charcoal powders, and mixtures thereof.

Claim 5: The toner according to claim 1, wherein the toner has a dielectric loss tangent of 0.01 or less.

Claim 6: The toner according to claim 1, wherein the resin binder comprises a high-softening point polyester having a softening point of 120°C or more and 170°C or less, and a low-softening point polyester having a softening point of 80°C or more and less than 120°C.

Claim 7: The toner according to claim 1, further comprising a low-melting point wax having a melting point of from 50° to 120°C.

Claim 8: The toner according to claim 7, wherein the low-melting point wax is at least one member selected from the group consisting of carnauba wax, montan ester wax, rice wax, candelilla wax, and mixtures thereof.

Claim 9: A two-component developer comprising the toner of claim 1 and a carrier.

Claim 10: In a process for development of an electrostatic image with a two-component developer, the improvement comprising development with the two-component developer of claim 9.

EVIDENCE APPENDIX

Declaration under 37 CFR 1.132 of named coinventor Shinji Moriyama, filed October 27, 2005.

Docket No.: 251290US0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: GROUP: 1756

Shinji MORIYAMA, et al.

SERIAL NO: 10/815,650 EXAMINER: DOTE, J. L.

FILED: April 2, 2004

FOR: TONER FOR ELECTROSTATIC IMAGE DEVELOPMENT

DECLARATION UNDER 37 C.F.R. 1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

Sir:

I, Shinji Moriyama, declare and state as follows:

1. I am a named coinventor of the above-identified application.

2.. I am familiar with the claims, and have read the Office Action mailed June 28, 2005, in the above-identified application.

3. A sample of the product, Shirasagi A-1, was obtained from the manufacturer (Japan EnviroChemicals, Ltd.[1] (URL: http://www.jechem.co.jp/index-e.html)).

4. The Shirasagi A-1 was measured with a laser diffraction particle size analyzer, SALD-2000J, commercially available from Shimadzu Corporation, and found to have a volume-based median particle size (D_{50}) of about 39.605 μm, as shown in the data sheet therefor, **attached herewith.**

5. While the SALD-2000J is different from the Coulter Multisizer II described in the specification of the above-identified application for measuring (D_{50}), it would be expected, nevertheless, that the (D_{50}) using the Coulter Multisizer II would have been of the same order of magnitude, and greater than the maximum of 5.6 μm of the present claims.

6. The commercial product described in the English translation of JP 61-203463 (Machida) as "Shirawashi A-1" is actually above-discussed Shirasagi A-1.

7. In Working Example 3 of Machida, there is no disclosure that toners (1), (6), (7) and (8) were produced from different charcoal powder starting materials. Thus, it is presumed that the Shirasagi A-1 was pulverized so as to be adjusted to have the desired particle size used. The coefficient of variation (CV) value can be freely adjusted by conditions of pulverization so that the CV value of the charcoal powder used in the examples of Machida cannot be assumed. To that end, the following experiments were conducted under my supervision and/or control.

8. A toner was prepared using the same raw materials as in Comparative Example 1 the above-identified application according to the following method.

Specifically, 9 parts by weight of Resin A, 9 parts by weight of Resin B, and 12 parts by weight of a charcoal powder "Taiko Activated Carbon SA 1000SA" (commercially available from Futamura Chemical Industries Co., Ltd, D50 :5.59 μm, CV :88.2 %) were melt-kneaded with a twin-screw kneader are, to give a masterbatch containing 40 % by weight of the charcoal powder.

Thirty parts by weight of the resulting masterbatch, 41 parts by weight of Resin A, 41 parts by weight of Resin B, 2 parts by weight of a charge control agent "BONTRON N-01" (commercially available from Orient Chemical Co., Ltd.), 0.2 parts by weight of a charge control agent "Copy Charge PSY" (commercially available from Clariant (Japan) K.K.), 1 part by weight of a polypropylene wax "Viscol 660P" (commercially available from SANYO CHEMICAL INDUSTRIES, LTD.) and 1.5 parts by weight of "Carnauba Wax C1" (commercially available from K.K. Kato Yoko) were mixed with a Henschel Mixer. Thereafter, the mixture was melt-kneaded with a twin-screw kneader, cooled, pulverized and classified, to give a powder having a volume-average particle size of 10 μm.

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[1] On information and belief, Japan EnviroChemicals, Ltd. was separated from Takeda Chemical Industries in April, 2003, and is now a subsidiary company of Osaka Gaa, as evidenced by the website printout attached herewith.

To 100 parts by weight of the resulting powder, 0.3 parts by weight of a hydrophobic silica "HVK 2150" (commercially available from Clariant (Japan) K.K.) were mixed and adhered with a Henschel Mixer, to give a toner. The dielectric loss tangent (tan d) of the resulting toner was 0.00514.

Further, 39 parts by weight of the resulting toner and 1261 parts by weight of the Carrier A were mixed with a Nauta Mixer, to give a two-component developer.

The background fogging (BG) and the thin-line reproducibility were determined or evaluated according to Test Example 2 of the above-identified application. As a result, BG was "1.02", and the thin-line reproducibility was "poor".

The toner prepared above showed an increase in dispersibility of the charcoal powder by using the masterbatch. It is also evident from the fact that the dielectric loss tangent of the toner is dramatically small as compared with that of the toner of Comparative Example 1.

However, while the toner showed the increase in dispersibility of the charcoal powder, the toner still has poor BG and the thin-line reproducibility. The reason why the toner has such properties is presumably as follows. Since the charcoal powder has too large CV, the charcoal powder that cannot be housed in the toner is exposed on the toner surface, thereby inhibiting the charging of the toner.

9. The data show that the effects of the present invention cannot be obtained when the CV value of the used charcoal powder does not satisfy the requirement of a CV of 80% or less.

10. The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

11. Further declarant saith not.

森山 伸二

Signature

Oct 25, 2005

Date

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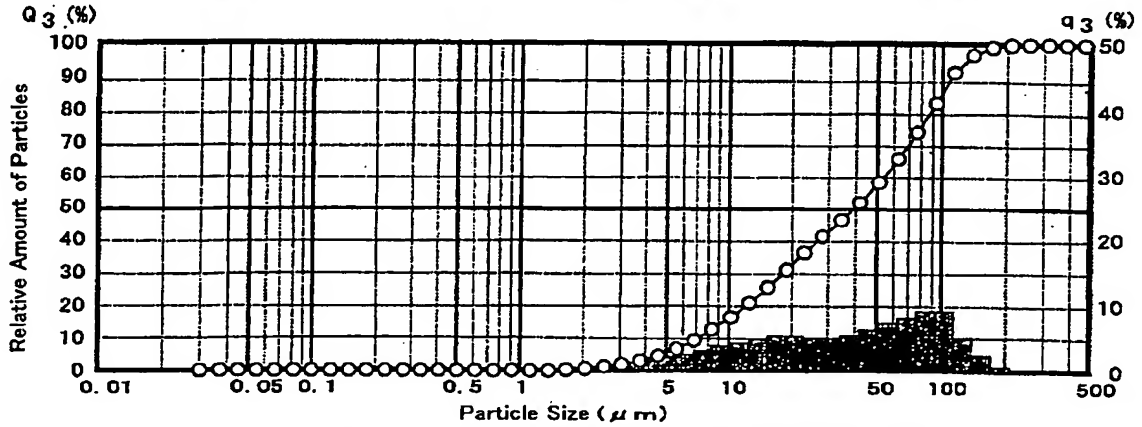
(OSMMN 07/05)

島津 SALD-2000J (SALD-2000-WJA2 : V1.01)

(File Name) kasseitan
(Sample ID)
(Sample ##)
(Date of Determination) 05/10/19
(Time of Determination) 13:29:14

Refractive Index=1.60-0.10i	Median Diameter : 39.605 Mode Diameter : 103.558	Average Value: 32.550 Standard Deviation: 0.462	10.0%D : 7.113 50.0%D : 39.605 90.0%D : 110.431	S Level : 0 Distribution Function : None D Shift : 0



	Particle Size x (μm)	Integration Value Q3 (%)	Difference Value q3 (%)		Particle Size x (μm)	Integration Value Q3 (%)	Difference Value q3 (%)		Particle Size x (μm)	Integration Value Q3 (%)	Difference Value q3 (%)
1	700.000	100.000	0.000	18	22.908	36.080	5.260	35	0.750	0.000	0.000
2	572.451	100.000	0.000	19	18.734	30.830	5.270	36	0.613	0.000	0.000
3	468.143	100.000	0.000	20	15.320	25.560	4.890	37	0.501	0.000	0.000
4	382.842	100.000	0.000	21	12.529	20.670	4.330	38	0.410	0.000	0.000
5	313.083	100.000	0.000	22	10.246	16.340	3.770	39	0.335	0.000	0.000
6	256.036	100.000	0.110	23	8.379	12.580	3.170	40	0.274	0.000	0.000
7	209.383	99.890	0.720	24	6.852	9.410	2.570	41	0.224	0.000	0.000
8	171.231	99.170	2.410	25	5.604	6.840	2.050	42	0.183	0.000	0.000
9	140.030	96.760	5.090	26	4.583	4.790	1.590	43	0.150	0.000	0.000
10	114.515	91.670	9.250	27	3.748	3.200	1.160	44	0.123	0.000	0.000
11	93.649	82.420	9.240	28	3.065	2.040	0.810	45	0.100	0.000	0.000
12	76.585	73.180	8.100	29	2.506	1.230	0.560	46	0.082	0.000	0.000
13	62.630	65.080	7.250	30	2.050	0.670	0.360	47	0.067	0.000	0.000
14	51.218	57.840	6.320	31	1.676	0.310	0.190	48	0.055	0.000	0.000
15	41.886	51.520	5.460	32	1.371	0.120	0.080	49	0.045	0.000	0.000
16	34.254	46.060	4.970	33	1.121	0.050	0.030	50	0.037	0.000	0.000
17	28.012	41.090	5.000	34	0.917	0.020	0.010	51	0.030	0.000	0.000

Sampling : Manual
Number of Determination : 4 Interval of Determination (sec) : 2
Range of Determined Absorbance (Maximum) : 0.200
Ultrasonic Exposure Time (sec) : __

Refractive Index: 1.60-010i
Average Number: 64
(Minimum) : 0.010
Dispersion Time (sec) : __

▶ Japan EnviroChemicals, Ltd. Overview

MAIN MENU

TOP PAGE

Greetings

Two years ago, in April 2003, Life-Environment Company of Takeda Chemical Industries, Ltd. marked a first step forward , as Japan EnviroChemicals, Ltd. with a company creed of "Dedicate ourselves to create more comfortable living environment."

We succeeded the activated carbon business, which, over the 70 years of history, had accounted for the largest share in Japan, and the preservative business, which had been sustained, more than 30 years, by a reputation of high reliability. We have been strived to continue a strong market position and to actively work on new environmental products with unique characteristics such as ELISA test kits for environmental "diagnosis," phosphates adsorbent, and water treatment carrier.

In April 2005, all share of Japan EnviroChemicals were transferred to Osaka Gas Co.,Ltd. and Osaka Gas Chemicals Co.,Ltd to aim to expand our business further by making technology and know-how of the group together.We are sincerely looking forward to serving you soon.

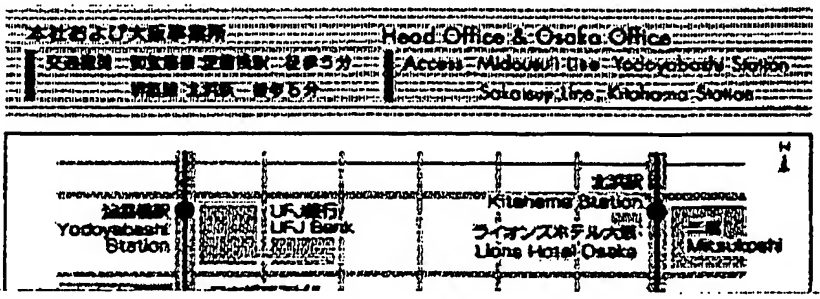
Japan EnviroChemicals, Ltd.
President
Atsuo Kobayashi Ph.D.

Corporate Outline

Corporate Name:	Japan EnviroChemicals, Ltd.
The Date of Initiation:	April 1, 2003
Paid-in Capital:	2.1 billion yen (70% Osaka Gas Chemicals, Ltd. 30% Osaka Gas, Ltd.)
Description of Business:	Research and development, manufacturing and purchasing of activated carbon, wood preservatives, industrial preservatives, ELISA test kits, phosphates adsorbent, and water treatment carrier
Employees:	140

Offices, R&D Laboratory, Plant

Head Office & Osaka Office:	3-8 Doshomachi, 2-chome, Chuo-ku, Osaka City, Osaka 541-0045 TEL +81-6-6204-2940 FAX +81-6-6204-2443



RELATED PROCEEDINGS APPENDIX

None.